

REMARKS

Herein, the "Action" or "Office Action" refers to the Office Action dated 4/7/2004.

Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-57 are presently pending. Claims amended herein are 45. Claims withdrawn or cancelled herein are none. New claims added herein are none.

Formal Claim Rejections

Claim Rejections under §112

Claim 45

The Office rejects claim 45 under 35 USC § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office indicates that the term "the monitor" lacks antecedent basis.

Accordingly, Applicant amends the claim to change "the monitor" to "the exocuster monitor." Applicant submits that this claim is clear in accordance with the requirements of 35 USC § 112, second paragraph.

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Substantive Claim Rejections

Claim Rejections under §§ 102 & 103

The Office rejects all of the pending claims under §102 and/or §103. For the reasons set forth below, the Office has not shown that cited references anticipate (under §102) the rejected claims. For the reasons set forth below, the Office has not shown made a *prima facie* case showing that the rejected claims are obvious (under §103). Accordingly, Applicant respectfully requests that the rejections be withdrawn and the case be passed along to issuance.

The Office's rejections are based upon the following references:

- Gossler: *Gossler et al.*, US Patent No. 5,799,173 (issued 8/25/1998);
and/or
- Luzzi: *Luzzi et al.*, US Patent No. 6,321,263 (issued 11/20/2001).

Overview of the Application

The Application describes a technology for remotely and dynamically monitoring the availability of the members of a load-balancing cluster. The technology provides a dynamic, exocluster application-layer monitor for dynamically monitoring and/or dynamically controlling the members of a load-balancing cluster.

The exocluster application-layer monitor is an active monitor—a controller. It may actively control the members that it monitors. The exocluster application-layer monitor is protocol agnostic. The exocluster application-layer monitor can dynamically adjust so that it can monitor all of the members of the cluster as members are added and removed.

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2 **Cited References**

3 The Office cites **Gossler** as its primary references in its anticipation- and
4 obviousness-based rejections. The Office cites **Luzzi** as its secondary reference in
5 its obviousness-based rejection.

6 **Gossler**

7 **Gossler** describes a technology for dynamically controlling the number of
8 servers in a transaction system comprising at least one service unit for processing
9 service requests. Each service unit comprises a queue for receiving and queuing
10 the incoming service requests and a plurality of servers for executing the service
11 requests.

12 **Gossler** describes a technology that uses the following three steps from the
13 point of view of the queue of each service unit:

- 14 • monitoring the current number of service requests and the current
15 number of servers allocated to a service unit of a service point,
16 • determining an optimized number of servers for a service unit
17 dependent on the current number of service requests and the current
18 number of servers, and
19 • allocating the optimized number of servers for a service unit of a
20 service point.
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Anticipation Rejections

Based upon Gossler

The Office rejects claims 1-13, 15, 20-32, 34, 37-43, 46-51, and 54 under USC § 102(b/e) as being anticipated by Gossler. Applicant respectfully traverses the rejections of these claims. Based on the reasons given below, Applicant asks the Office to withdraw its rejection of these claims.

Claim 1

With the cited portions of Gossler and the Office's comments provided in brackets, this claim recites:

- **dynamically determining present members** ["servers", line 42, col. 4] **of a load-balancing cluster**; ["dynamic workload balancing method provided by the queuing monitor 85 or any other queuing monitor order to employ an optimized number of servers for each service unit to be monitored," lines 40-43, col. 4]
- **monitoring** ["the queuing monitor 85 monitors and controls the servers for each one of the service units of the service point," lines 16-19, col. 3] **application-layer** ["the queuing monitor 85 provides a dynamic workload balancing and a defined structure for the processes of the server," lines 54-57, col. 3] **availability of one or more members** ["the minimum and the maximum number of the servers to be available to execute the processes," lines 4-16, col. 4] **of the cluster** ["a plurality of servers," line 59, col. 2] **as such availability is observed from a client-perspective**. ["the queuing monitor 85 monitors and controls the servers for each one of the service units of the

1 service point but the queuing monitor 85 is not part of the cluster of service units and
 2 servers," lines 11-59, col. 3, Figs. 2-3]

3
 4 "Dynamically Determining"

5 This claim recites, "dynamically determining present members of a load-
 6 balancing cluster." Applicant submits that Gossler's determination of the
 7 membership consists of a receiving a static membership definition (called the
 8 "trigger message 87") and that this is not "dynamically determining" as recited in
 9 the claim.

10 Gossler uses the conventional approach to determining cluster
 11 membership. That approach includes using a static definition, which is typically
 12 supplied by a manually maintained configuration data.

13 On page 7, lines 6-14, the Application discusses the conventional approach
 14 of static definition of cluster membership (which is what Gossler does):

15
 16 Static Cluster Membership. Conventional exocuster application-layer monitors
 17 monitor a static set of hosts; there is no notion of a cluster. That is, they are not
 18 cluster-aware. They are not dynamic. In other words, they cannot dynamically
 19 monitor all of the members of the cluster as members are added and removed.
 20 They can monitor new members (or stop monitoring old members) once the
 21 membership is statically defined specifically for the monitor. However, the
 22 conventional exocuster application-layer monitors cannot dynamically begin
 23 monitoring new members as they are added to the cluster or dynamically stop
 24 monitoring old members as they are removed.

25 Col. 3, lines 14-17, Gossler describes how the queuing monitor 85
 "receives the trigger message 87 which contains the name of the service unit
 queues 57 and the name of the servers to be started." The list of server names in

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1 the "trigger message" is a static definition of the cluster membership analogous to
 2 the conventional approach described in the background of the Application.

3 Therefore, Applicant submits that Gossler does not disclose "dynamically
 4 determining present members of a load-balancing cluster," as recited in the claim.

5 "Monitoring Application-Layer Availability"

6 As recited in this claim, the monitoring is not just of the *availability* of one
 7 or more members of the cluster, but of the "*application-layer availability*" of one
 8 or more members. Applicant submits that Gossler never discloses monitoring the
 9 "application-layer availability" of its servers.

10 The Office does not cite any portion of Gossler for disclosing the concept
 11 of "application-layer availability." Instead, the Office cites col. 3, lines 54-57, of
 12 Gossler for disclosing just the "application-layer" modifier of "availability." That
 13 portion of Gossler is quoted here: "The queuing monitor 85 provides a dynamic
 14 workload balancing and a defined structure for the processes of the server."
 15 However, that portion of Gossler never discusses, teaches, suggestions, etc.
 16 anything related to the "application-layer." It does not define it or distinguish it
 17 from any other layer.

18 Applicant submits that neither this cited portion of Gossler nor any portion
 19 of Gossler discloses, teaches, or even suggests "application-layer availability"
 20 monitoring, as recited in the claim.

21 "As Such Availability Is Observed From A Client-Perspective"

22 This claim recites, "as such availability is observed from a client-
 23 perspective." Applicant submits that Gossler observes availability from within
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1 the collective (called a "service point" herein) of components that are being
2 monitored and controlled.

3 The Office cites lines 11-59, col. 3, (and Figs. 2-3), of Gossler for
4 disclosing "as such availability is observed from a client-perspective," as recited in
5 the claim.

6 The Office states, "the queuing monitor 85 monitors and controls the
7 servers for each one of the service units of the service point but the queuing
8 monitor 85 is not part of the cluster of service units and servers." However, that
9 portion of Gossler never discusses, teaches, suggestions, etc. anything related to
10 the "perspective" from which the availability is observed.

11 From this the Applicant understands that the Office is arguing that since the
12 queuing monitor is "not part of the cluster of service units and servers" that this
13 equates to observing availability from a client's perspective. If the premise of the
14 argument is true, then Applicant submits that there is nothing in Gossler to
15 conclude that the queuing monitor would be observing from a client-perspective.

16 Applicant submits that Glosser needs to provide something more for such a
17 logical conclusion to be drawn simply from a premise that the queuing monitor is
18 "not part of the cluster of service units and servers." Applicant asks the Office to
19 show the something more.

20 Furthermore, Applicant submits that the premise of the argument is not
21 valid. That premise again is that the "queuing monitor 85 is not part of the cluster
22 of service units and servers" which the Office equates to being outside the cluster
23 recited in the claim.
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As shown in Fig. 2 (reproduced on the right), the queuing monitor 85 is included inside the dotted line which defines the service point 50. Fig. 3 depicts the same relationship where queuing monitor 85 is inside the dotted line which defines the service point 50.

In other words, it is not outside, but, instead, inside the depicted collection being monitored and controlled. That collection is inside the dotted line and is called the service point.

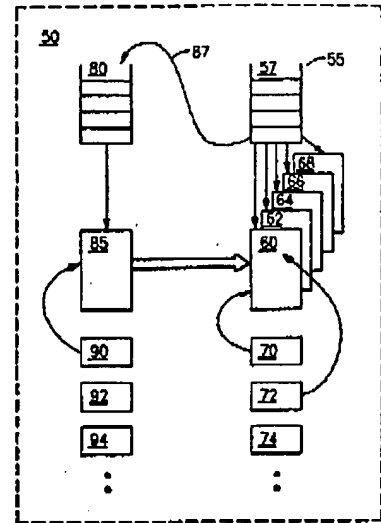


FIG.2

In addition to the visual evidence of Figs. 2 and 3 that the queuing monitor is part of an inclusive group (rather than on the outside looking in), there is textual evidence as well. Col. 3, lines 11-12, Gossler says, "the service point 50 further *contains* an initiation queue 80 *connected with* a queuing monitor 85" [emphasis added]. Col. 4, lines 37-39, Gossler says, "the queuing monitor 85 employs an optimized number of servers for each service unit 55, 104 and 120 to be monitored by the queuing monitor 85 *in the service point*" [emphasis added].

Therefore, Applicant submits that Gossler does not disclose "as such availability is observed from a client-perspective," as recited in the claim.

As shown above, Gossler does not disclose all of the claimed elements and features of the claim. Accordingly, Applicant asks the Office to withdraw its rejection of this claim.

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Claims 2-20

These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable.

In addition to its own merits, each of these dependent claims is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each of these dependent claims because its base claim is allowable.

Claim 21

The Office indicates that it rejects this claim for the same reasons as it rejects claims 1-2 above. If so, then Applicant submits that this claim is allowable for the same reasons given above for the allowability of claims 1-2.

Claims 22-37

These claims ultimately depend upon independent claim 21. As discussed above, claim 21 is allowable.

In addition to its own merits, each of these dependent claims is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each of these dependent claims because its base claim is allowable.

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Claim 38

The Office indicates that it rejects this claim for the same reasons as it rejects claim 21 above. If so, then Applicant submits that this claim is allowable for the same reasons given above for the allowability of claim 21.

Claim 39

The Office indicates that it rejects this claim for the same reasons as it rejects claims 1-2, 4, 7, and 10 above. If so, then Applicant submits that this claim is allowable for the same reasons given above for the allowability of claims 1-2, 4, 7, and 10.

Claims 40-45

These claims ultimately depend upon independent claim 39. As discussed above, claim 39 is allowable.

In addition to its own merits, each of these dependent claims is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each of these dependent claims because its base claim is allowable.

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Claim 46

The Office indicates that it rejects this claim for the same reasons as it rejects claims 1, 3-4, 6-7, and 10 above. If so, then Applicant submits that this claim is allowable for the same reasons given above for the allowability of claims 1, 3-4, 6-7, and 10.

Claims 47-53

These claims ultimately depend upon independent claim 46. As discussed above, claim 46 is allowable.

In addition to its own merits, each of these dependent claims is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each of these dependent claims because its base claim is allowable.

Claim 54

The Office indicates that it rejects this claim for the same reasons as it rejects claims 1-2 and 10 above. If so, then Applicant submits that this claim is allowable for the same reasons given above for the allowability of claims 1-2 and 10.

Claims 55-57

These claims ultimately depend upon independent claim 54. As discussed above, claim 54 is allowable.

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In addition to its own merits, each of these dependent claims is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each of these dependent claims because its base claim is allowable.

Obviousness Rejections

Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)

Applicant disagrees with the Office's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a *prima facie* case have not been met.

Based upon Gossler and Luzzi

The Office rejects 14, 16-19, 33, 35-36, 44-45, 52-53, and 55-57 under USC § 103(a) as being unpatentable over Shur as modified by Luzzi. Applicant respectfully traverses the rejections of these claims. Applicant asks the Office to withdraw its rejection of these claims.

These claims ultimately depend upon independent claims 1, 21, 39, 46, and/or 54. As discussed above, these claims are allowable.

In addition to its own merits, each of these dependent claims is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each of these dependent claims because its base claim is allowable.

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Dependent Claims

In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each dependent claim where its base claim is allowable.

Conclusion

All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the Office is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

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